

## WHAT IS CLAIMED IS

1. An electron beam lithography system of a type in which an electron beam is scanned according to a predetermined drawing program to draw circuit patterns on a target wafer, said system comprising:

a calculating means that calculates beforehand thermal deformation occurring in the target wafer, said thermal deformation being caused by applying the electron beam, calculates from the result of the calculation compensation data required to compensate the amount of discrepancy in electron-beam applying position, and then stores the compensation data; and

a control means that compensates at the time of electron beam lithography, according to the compensation data read out from the calculating means, at least one of a dose and an applying position of the electron beam applied according to the drawing program.

2. An electron beam lithography system of a type in which an electron beam is scanned according to a drawing program that is predetermined but can also be changed to draw circuit patterns on a target wafer, said system comprising:

a calculating means that calculates thermal deformation occurring in the target wafer, said thermal deformation being caused by the electron beam applied according to the drawing program, and calculates from the

result of the calculation compensation data required to compensate the amount of discrepancy in electron-beam applying position; and

a control means that compensates, according to the compensation data read out from the calculating means, at least one of a dose and an applying position of the electron beam applied according to the drawing program;

wherein said calculating means calculates the compensation data in real time at the time of electron beam lithography.

3. An electron beam lithography system according to Claim 1 or 2, wherein:

said calculating means calculates the compensation data by means of computer simulation.

4. An electron beam lithography method of a type in which an electron beam is scanned according to a predetermined drawing program to draw circuit patterns on a target wafer, said method comprising the steps of:

calculating beforehand thermal deformation occurring in the target wafer, said thermal deformation being caused by the application of the electron beam;

calculating from the result of the calculation compensation data required to compensate the amount of discrepancy in electron-beam applying position, and then storing the compensation data; and

compensating at the time of electron beam

lithography, according to the compensation data, at least one of a dose and an applying position of the electron beam applied according to the drawing program.

5. An electron beam lithography system of a type in which an electron beam is scanned according to a drawing program that is predetermined but can also be changed to draw circuit patterns on a target wafer, said method comprising the steps of:

calculating thermal deformation occurring in the target wafer, said thermal deformation being caused by the electron beam applied according to the drawing program;

calculating from the result of the calculation compensation data required to compensate the amount of discrepancy in electron-beam applying position; and

compensating, according to the compensation data read out from the calculating means, at least one of a dose and an applying position of the electron beam applied according to the drawing program;

wherein the compensation data is calculated in real time at the time of electron beam lithography.

6. An electron beam lithography method according to Claim 4 or 5, wherein:

said step for calculating the compensation data is a step for calculating the compensation data by means of computer simulation.